## REMARKS

This amendment is in response to the Office Action dated December 14, 2006. Reconsideration of this application is respectfully requested in view of the foregoing amendment and the remarks that follow.

## STATUS OF CLAIMS

1. Claims 1-20 are pending.
2. Claims 1-20 are rejected.
3. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

## OVERVIEW OF CLAIMED

The present invention provides for a method for reducing DC offset associated with a receiver comprising the steps of: (a) receiving the received bust r(n); (b) storing the received burst samples, r(n), in a memory; (c) averaging said stored burst samples, r(n), and calculating an initial DC offset, $A_0$, from the stored burst samples; (d) removing DC offset value from stored burst as follows: $r(n) - A_0$; (e) identifying a rough timing estimate defining a position of largest channel impulse response (CIR) tap via cross-correlating stored burst data with a training sequence; (f) performing fine CIR synchronization to identify taps to be added to said identified largest CIR tap; (g) estimating an updated DC offset, $A_1$, and a CIR , $\hat{h}$, via a perturbed LS CIR estimation where the received burst r(n) is modeled as follows:

$$r_j = \sum_{i=0}^{L-1} h_i t_{j-i} + f_j m + z_j$$

where $h_i$ are CIR taps, $t_j$ are known training sequence symbols, $f_j$ is a generic function of j, $m$ is static DC offset; and $z_j$ is additive white Gaussian noise, and removing updated DC offset from stored burst as follows: $r(n) - A_0 - A_1$. Perturbed LS CIR estimation can be carried in one step using the model stated above, or in two steps where first step consists of joint DC offset and CIR estimation and the second step is based on the model stated above. The present invention also provides for a communication system that implements the above-method, computer-program code that implements the above-method, and an integrated circuit implementing the above method.

In the Claims

**Claim Objections**

As per the Examiner's suggestion, claim 1 has been amended to recite "signal burst samples". A similar amendment has been made to independent claims 6, 7, and 18. Also, claims 1, 6, 7, and 18 have been amended for clarification purposes only to recite "least squares" instead of LS. No new matter has been added via the current amendment.

**Claim Rejection under 35 U.S.C §101**

Claims 1-20 are rejected under 35 U.S.C. §101 as the claims are directed to non-statutory subject matter. Specifically, the Examiner suggests that claims 1-20 fail to provide a tangible result. Applicants respectfully disagree with the Examiner. Specifically, the Examiner's

attention is directed to claim 1 of the application-as-filed where the final step of the method is "removing updated DC offset from stored burst as follows: $r(n) - A_0 - A_1$". The Examiner's attention is also directed to the preamble of claim 1, which specifically recites a "method for reducing DC offset associated with a receiver". Applicants, therefore, respectfully assert that claim 1 recites a "tangible result" of removing updated DC offset which was calculated according to a perturbed LS CIR estimation. The same argument applies for independent claims 7 which also recites a similar feature, and thereby recites a "tangible result". For clarification purposes only, Applicants have amended claims 1 and 7 to actively recite the step of removing updated DC offset from stored burst as follows: $r(n)-A_0-A_1$. No new matter was added via this amendment. Hence, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §101 rejections with respect to claims 1 and 7.

Further, with respect to independent claims 6 and 15, dealing with an article of manufacture, Applicants are unsure why the Examiner considers such subject matter "non-statutory", when the courts have repeatedly ruled that an article of manufacture having computer-product code causing data transformation does fall in the statutory realm. Applicants also wish to note that the computer code of claims 6 and 15 do cause a transformation in the data based on the removal of DC offset step. Hence, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §101 rejections with respect to claims 6 and 15.

Also, with respect to independent claims 12 and 18, which deal with a system and integrated circuit, respectively, Applicants respectfully request clarification as what the Examiner considers statutory, as Applicants respectfully assert that system claims and apparatus claims

have long been considered in the statutory realm. Hence, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §101 rejections with respect to claims 12 and 18.

Further, the Examiner contends, with respect to claims 1, 6, 7, and 18, that it is unclear how A1 can be calculated via the equation given as a function of rj. The Examiner is respectfully reminded that the presently claimed invention is not merely directed to estimating a DC offset, but specifically is related to a joint estimation of an updated DC offset, $A_1$, and a channel impulse response (CIR), $\hat{h}$, via a perturbed least squares(LS) CIR estimation representation modeling received burst r(n) as follows:

$$r_j = \sum_{i=0}^{L-1} h_i t_{j-i} + f_j m + z_j$$

Also, the Examiner is directed to Figure 1 of the application-as-filed (which is reproduced below for the convenience of the Examiner) which illustrates a prior art system that does calculate the DC offset.

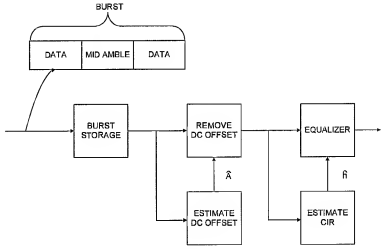


FIGURE 1
(PRIOR ART)

Figure 4 of the application-as-filed (which is reproduced below for the convenience of the Examiner) illustrates an embodiment of Applicants' system. It can be seen that a DC offset is calculated both in figure 1 (the prior art) and figure 4, but figure 4 specifically outlines estimation of DC offset using "perturbed" estimation matrix modeling the received burst samples in a particular manner as claimed in, for example, claim 1. In stark contrast, the prior art fails to teach or suggest any "perturbed" modeling.

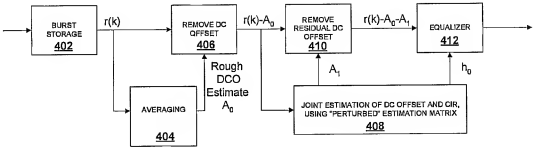


**FIGURE 4**

Applicants respectfully assert that claim 1 (and other independent claims) specifically recites the novelty of a joint estimation of a DC offset, A1, and a channel impulse response (CIR) via a perturbed least squares(LS) CIR estimation representation modeling received burst r(n) as follows: $r_j = \sum_{i=0}^{L-1} h_i t_{j-i} + f_j m + z_j$.

Hence, Applicants respectfully request the Examiner to withdraw the 35 §U.S.C. 101 rejections with respect to the pending claims.

## SUMMARY

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicants' presently claimed invention individually, or in combination, nor render them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this amendment has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge the extension fee, as well as any deficiencies in the fees provided to Deposit Account No. 19-0079.

If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact applicants' representative at the below number.

Respectfully submitted,

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